Existing Systems Approval (ESA)

Workbook

A workbook approach for Group A Public Water Systems to submit Existing System Approval information

December 2003

DOH PUB. # 331-244

Contents

Owner's Statement & Background Information

Water System Name: _____

Water System ID Number: _____ County: _____

Owner's Statement of Accuracy and Understanding:

I, the undersigned, do hereby attest that I am the owner of this water system and that the information provided in this ESA Workbook is accurate to the best of my knowledge. I further understand that I will not be able to add additional connections or make major modifications to my water system without first obtaining additional written approval from the Department of Health (DOH).

_____
Name of Owner (print legibly)

_____ _____
Signature of Owner Date of Signature

Preparer's Information (print legibly):

Name and Title _____

Address _____

Address _____

Telephone numbers (day and evening) _____

Fax number (if any) _____

Email address (if any) _____

Note: Detailed instructions for completing this workbook are contained in a separate publication, *Existing Systems Approval (ESA): General Information and Workbook Instructions* (DOH publication #331-245).

Element 1– Water Facility Inventory (WFI) Update

A copy of the updated WFI is attached. ☐ Yes

Note: an updated WFI will be required in order to obtain an ESA.

Element 2 - Basic Water System Information

1. Water System Type:

   ☐ Group A Community

   ☐ Group A Transient Non-community (TNC)

   ☐ Group A Non-Transient Non-community (NTNC)

2. Date of first operation for public use of the public water system: _____

3. Names and addresses of all owners (if the owner is an organization or company, you must list the name, address, phone, etc of an owner's contact person):

   Owner Name: _____

   Address: _____

   City/State/Zip: _____

   Phone: _____

   Fax: _____

   E-mail: _____

   Owner Name: _____

   Address: _____

   City/State/Zip: _____

   Phone: _____

   Fax: _____

   E-mail: _____

   Owner Name: _____

   Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

E-mail: _____

Add additional pages if appropriate.

4. Certified Operator's Name, Certificate Number and Address:

☐ NA, not required to have a certified operator

Certified Operator's Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Certificate Number: _____

Certified Operator's Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Certificate Number: _____

5. Emergency Contact Reference List (Names, addresses and phone numbers):

Emergency Contact Type	**Name, Title and Phone Number(s)**	**Address(es), if needed**
Water System 24-hour Emergency Number		
Fire		
Police		
Medical		
County Emergency Services		
County Environmental Health Services		
State Drinking Water	Eastern – 509-456-3115	

Emergency Contact Type	Name, Title and Phone Number(s)	Address(es), if needed
Program (DOH)	Northwest – 253-395-6750 Southwest – 360-664-0768 Toll Free – 1-800-521-0323	
DOH After-Hours Emergency Line	1-877-481-4901 (after hours)	
FBI (if security breach is suspected)	206-622-0460	
Electrical Utility		
Electrician Services		
Pump Services		
Plumbing Services		
Engineering Services		
Media Contact		
Call before you dig		
Other		

6. Water Use: Estimate how much water your water system uses on an average day (ADD) and on the highest demand day of the year (MDD). Estimates may be based upon data from source meters, tank depth measurement changes, and/or other methods.

ADD estimate: _____ gallons/day

MDD estimate: _____ gallons/day

Is a source meter installed? ☐ Yes ☐ No

Have you recorded source meter readings? ☐ Yes ☐ No

Note: Systems seeking an Existing System Approval must have a functional source meter that measures the total volume of water pumped.

How did you determine ADD?

_____

How did you determine MDD?

_____

7. Fire Flow requirements:

Is there a fire flow requirement? ☐ Yes ☐ No

Specify the fire flow requirement: _____ gallons/minute for _____ minutes

Note: If the local fire official has established a fire flow requirement, your system may not be eligible for an Existing System Approval.

8. List and describe any water treatment processes that are installed.

Water Treatment Process	Installed Yes/No	Description and Purpose of the Treatment Process
Disinfection		
Filtration		
Iron or Manganese Removal		
Corrosion Control		
Other		

Element 3 – Existing System Layout and Map

Attach a copy (you keep the original) of the existing distribution lines and connections.

As available information allows, draw in the location of the facilities listed below (if your system does not have a particular type of facility (e.g., booster pumps) write in NA (i.e., not applicable):

☐ Sources (label with well name, DOH source #)
☐ Treatment facilities with capacities
☐ Hydrant
☐ Service Connections
☐ Distribution lines
☐ Valves
☐ Storage facilities
☐ Pressure Zones
☐ Booster pumps
☐ Sampling points
☐ Pressure Tanks

If the map is too large to attach, indicate which facilities are identified on your map, who produced the map, when the map was produced, and where the map is kept (e.g., office, shop, etc.).

- Location of system layout map: _____
- Date the system layout map was created: _____
- Name of person who created the system layout map: _____

Element 4 – Operations and Maintenance (O&M) Program

1. System Operations and Maintenance Personnel: complete the table.

Name	Title/Certificate Number	Phone Number (Day/Night)

2. Operation and Maintenance Activities: complete the table:

O&M Functions	**Schedule**—List the frequencies (daily, weekly, monthly, as required, etc)
System Start Up/Shut down	
Responding to Water outages	
Responding to water quality emergencies	
Line Flushing	
Reservoir cleaning	
Coliform Sampling	
Nitrate Sampling	
Chemical Sampling (IOC, VOC, SOC)	
Other WQ Sampling	
Equipment Maintenance	
Well pump(s)	
Meters	
Booster Pump(s)	
Valves	

O&M Functions	**Schedule**—List the frequencies (daily, weekly, monthly, as required, etc)
Disinfection System	
Other chemical feed systems	
Leak repairs	
Leak repair	
Other O&M tasks (specify)	

3. List of Contractors and Suppliers

Description of Item or Service	**Name/Contractor/Supplier**	**Phone Number**

Element 5 – Water Rights Documentation

1. Is your water system required to have a water right? Check "yes" if estimated highest demand day (MDD) is 5,000 or more gallons/day.

   ☐ Yes ☐ No

2. If you answered "No" to question 1 above, explain how you reached this conclusion.

_____
_____
_____
_____
_____

3. Attach copies of your water right documentation.

4. If you have water rights, complete the Water Right and Water Use Table.

Water Right and Water Use Table

	Source ID#			
Water Rights Parameters				
Instantaneous (maximum gallons per minute/cubic ft per second)				

Annual Withdrawal Limit (maximum acre/feet per year)				
Estimated Use Information				
Pumping Rate (from Element 9, item 1)				
Annual Use (from Element 2, item 6)				

5. Is the pumping rate less than or equal to the instantaneous water right (from the water rights parameters above)?

   ☐ Yes ☐ No

   If you marked "no", you do not have adequate water rights.

6. Is the annual use less than or equal to the annual withdrawal limit (from the water rights parameters above)?

   ☐ Yes ☐ No

   If you marked "no", you do not have adequate water rights.

7. If you checked "No" to either question 5. or 6. then your water rights are considered to be inadequate. In order to obtain an ESA you are required to make application for new or additional water rights. A copy of your application to Ecology will be considered proof of application for water rights.

Element 6 – Coliform Monitoring Plan (CMP)

Attach the completed Coliform Monitoring Plan (CMP) form and map. Refer to DOH publication "*Preparation of a Coliform Monitoring Plan"* for detailed instructions. You should be certain that the number of monthly samples in listed in your CMP agrees with or exceeds the number of coliform samples printed on your WFI form.

Element 7 – Water Quality Monitoring Information

1. Initial Water Quality (WQ) Monitoring: Provide evidence that you have completed the initial water quality monitoring specified by the DOH. Include a copy of the requirements specified by DOH and copies of laboratory results.

2. Ongoing WQ Monitoring: Attach a copy of your Water Quality Monitoring Report (WQMR) or other documentation from the Department, which shows your annual water quality monitoring requirements.

3. Is there a source-sampling tap installed near the wellhead and upstream from any storage or pressure tanks?

   ☐ Yes ☐ No

   Note: Systems seeking an Existing System Approval must have a properly located source-sampling tap near the wellhead

Element 8 – Sanitary Survey Inspection and Follow-up Corrections

1. Attach a copy of your sanitary survey inspection report.

2. If the sanitary survey report is more than 5 years old, contact your DOH regional office and schedule a sanitary survey. For instructions on getting ready for the survey, refer to DOH Publication #331-238, *Preparing for a Sanitary Survey: Information to Help Small Water Systems.*

3. Provide documentation that survey deficiencies noted in the sanitary survey findings have been corrected to the satisfaction of DOH.

Element 9 – Adequate Pressure and Water Availability

1. What method have you selected to demonstrate adequate water pressure and availability?

   ☐ Pressure readings recorded under actual or simulated peak flow conditions.

   ☐ Other approach, (specify details in a report which provides an explanation and justification for your approach).

2. Well Pump Information: (provide this information for each well pump)

   Manufacturer: _____

   Pump Model: _____

   Attach a copy of the pump curve or table, if available. Pump curve attached:

☐ Yes ☐ No

DOH Source # for this well is _____

Well pump capacity for this well is _____ gpm.

What pressure zone does this well supply? _____

3. Provide a narrative description of the pressure zones for your distribution system. (Note: most systems will only have a single pressure zone). For each pressure zone in your system indicate how that zone is pressurized by checking the appropriate box:

Pressure Method	Zone 1	Zone 2	Zone 3
Well/Pressure Tank			
Gravity Storage			
Booster Pump/Pressure Tank			
Other: _____			

_____
_____
_____
_____
_____
_____
_____
_____
_____

4. Pressure Tank Information: Complete this element for each pressure tank installation.

What pressure zone does this pressure tank installation serve? _____
This pressure tank(s) is/are installed to provide

☐ Well pump protection

☐ Booster Pump protection

Manufacturer: _____

Pressure Tank Model: _____

Total number of pressure tanks: _____

What size are the pressure tanks (32, 86, 119, etc gallons)? _____

What is the operating pressure range of the system (30/50, 40/60, 50/70, ☐ psi)?

5. Pressure Gauge Readings**:** Provide pressure readings recorded under actual or simulated flow conditions. Use a pressure gauge to measure pressure. Pressure

readings should represent peak flows measured at the highest elevation point (customer) point in a system, at the most distant connections from the source, and at representative locations through out the distribution system. If your are taking pressure measurements during low demand periods, then you should simulate peak demand flows by opening hydrants, blow offs, etc and duplicating peak demand flows.

Record pressure readings during peak flows or usage periods in the following table.

Pressure gauge installation sites	**Pressure Measured in Zone 1**	**Pressure Measured in Zone 2**	**Pressure Measured in Zone 3**
Site most distant from source of pressure			
Site with highest water demand			
Representative sites (specify where)			
a)			
b)			
c)			

Explain where the pressure measurements were taken and explain why you selected these sample sites. Explain how you simulated peak flow conditions.

_____
_____
_____
_____
_____
_____
_____
_____

6. Pressure Adequacy Certification.

Is the system able to provide 20 psi to all connections under maximum flow conditions?
☐ Yes ☐ No

All systems seeking an ESA must be able to demonstrate that all service connections can be provided 20-psi pressure (measured at the service meter or property line) under maximum flow conditions.

Name of person completing Element 6: _____

License or Certification Number: _____
(if applicable)

Date: _____

Element 10 – Inventory of Potential Sources of Well Contamination and Confined Aquifer Determination

Attach a completed Element 10 worksheet for each well that you are able to use.

1. Source Name: _____
   (Must match WFI Source Name)

2. Source ID #: _____
   (Must match WFI Source ID # number)

3. Type of Source: (check 1 box)

   ☐ Permanent Well (the main well)

   ☐ Seasonal Well (used for part of the year such as during dry summer and fall months)

   ☐ Emergency Well (only used for emergencies such as a pump failure)

   ☐ Other: explain

4.Complete the Potential Source of Contamination Worksheet (next page):

Potential Source of Contamination Worksheet

Potential Contaminant Source Type	Is the potential contaminant within 100' of the well? Yes/No	Distance from the well (ft.)
Abandoned ground water wells		
Animal burial		
Drainfields and septic tanks		
Drywells		
Dumpsters		
Fuel Storage		
Graveyards		
Home/Garage/Out Buildings		
Hazardous waste storage, distribution, transport facilities		
Hazardous waste disposal sites		
Irrigation Canal(s)		
Landfills, dumps, disposal areas		
Other sources of biological contaminants		
Pesticide application or storage		
Roads, driveways and parking lots		
Sludge storage or storm water catch basins		
Septic Tank or septic drainfield		
Sewer lines, gravity or pressure		
Surface Water (lakes, rivers and streams)		
Underground storage tanks		
Wastewater spray irrigation		
Other (specify)		

5. Is a well report available for this well?

☐ Yes (attach copy) ☐ No (Stop, do not complete Items 6-9 if you do not have a well log)

6. Does the well report show that an 18-foot (minimum) surface seal (of cement, bentonite, or grout) was installed below ground surface?

☐ Yes ☐ No

7. Are all well screens and/or open intervals (such as mill-knife perforations or open-bottomed casings) deeper than 50 feet from the top of the casing?

☐ Yes ☐ No

8. Complete the Confined Aquifer Determination Worksheet (next page):

Confined Aquifer Determination Worksheet

Step	Element	Feet	
1	Total thickness of <u>confining layers</u> identified in driller's log: *Note: This section can only be completed with the use of a well report or geologic log, which will show the layers of material that were encountered during drilling (cobbles, gravel, sand, rock, fractured rock, basalt, silty sand, till, hardpan, clay, etc.).* *Find the zone where the well is screened or open. Look at the materials encountered <u>above</u> that point. Do any of those layers consist of <u>fine silty sands, clays, unfractured rock, hardpan, or till</u>? If so, these layers are considered to be impermeable (confining) layers, which may serve to protect the aquifer from surface contamination.*		- - - - - -
2	If the total in Step 1 is greater than 10 feet for multiple layers, or greater than 5 feet for a single confining layer, then proceed below. If not, **STOP HERE** and check the box at right ➔	- - - - -	☐ Not confined
3	Depth from the top of the well casing to the bottom of lowest confining layer:		- - - - - -
4	Depth from the top of well casing to the static water level in the well: *Note: This would be listed in part 8 of the well report. It is the standing level of water in the well, or the depth to water in the well measured from the top of the well. It may be significantly different from either the total depth of the well or the top of the open interval. If this information is not available on the well report, a current water level measurement can be used as an estimate. If the well is under pressure, or is a flowing well, indicate this as an additional notation in the space to the right*		- - - - - -
5	Result – Subtract Step 4 from Step 3		- - - - - -
6	If the result in Step 5 is equal to or greater than 20 feet, the source can be considered confined, and you may check the box at right ➔	- - - - -	☐ Confined

9. Does the water well report or geologic log demonstrate that the source of water comes from a confined aquifer? (See step 6 of item 8 above)

   ☐ Yes ☐ No

Element 11 – Distribution System Description & Assessment

1. Summarize general distribution system characteristics such as pipe sizes, material, and age.

   _____
   _____
   _____
   _____
   _____
   _____

2. Summarize areas of known physical deficiencies and routine pipe replacement programs:

   _____
   _____
   _____
   _____
   _____

Element 12 – Storage Facility Description &Assessment

Provide the following information:

1. Check the appropriate box (see list of useful formulas and conversion factors):

   ☐ An above ground storage reservoir Volume = _____ gallons

   ☐ A below ground storage reservoir Volume = _____ gallons

   ☐ Not Applicable

2. What material is the reservoir made from?

   ☐ Steel

   ☐ Concrete

☐ Other, specify: _____

3. Can the storage tank be valved off from the system?

   ☐ Yes ☐ No

4. Are there any openings in the tank that could allow anything (insects, birds, mice, etc.) into the tank?

   ☐ Yes ☐ No

   If you answered "yes", then describe how you propose to close or screen the openings.

   _____
   _____
   _____
   _____

5. Are access hatches locked?

   ☐ Yes ☐ No ☐ there is not an access hatch

   If you answered "no", then describe how you propose to lock the hatches.

   _____
   _____
   _____
   _____

6. Is the storage site protected against vandalism?

   ☐ Yes ☐ No

   If you answered "no", describe how you propose to protect against vandalism.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____